

ELBOW DRIVE S.W.

26TH AVENUE
TO
58TH AVENUE

U STREETSCAPE DESIGN & T TRAFFIC MANAGEMENT PLAN

Version 2.0



THE CITY OF CALGARY

LAND USE AND MOBILITY



**Morasch
Transportation
Consultants Ltd.**

Carson • McCulloch Associates Ltd.



Consultants in Landscape Architecture, Urban Design and Site Planning



LINDA STEWART
Public Consultation Services

April 2002

URBAN STREETSCAPE DESIGN
& TRAFFIC MANAGEMENT PLAN

ELBOW DRIVE S.W.
26TH AVE. TO 58TH AVE.

TABLE OF CONTENTS

EXECUTIVE SUMMARY

BACKGROUND

PROJECT PURPOSE
PROJECT LOCATION
CONTEXT
PROJECT ORIGINS
ICTSMS OBJECTIVES FOR ELBOW DRIVE

PROPOSED PLAN

GENERAL
TRANSPORTATION COMMENTARY
PROJECT SPECIFICS
PROJECT COSTS
IMPLEMENTATION AND PHASING
CONCLUSIONS

APPENDICES

PROJECT TERMS OF REFERENCE
BICYCLE ROUTE DISCUSSION
INNER CITY ROAD DESCRIPTIONS
PUBLIC CONSULTATION PROCESS
TRANSIT DISCUSSION
CORRIDOR STRATEGY FROM ICTSMS REPORT
TECHNICAL REVIEW PANEL REPORT EXTRACT

EXECUTIVE SUMMARY

THE PROJECT

The Elbow Drive S.W. Urban Streetscape Design & Traffic Management Plan originates from the *Calgary Transportation Plan (GoPlan) of 1995*, and the *Inner City Transportation System Management Strategy (ICTSMS) of 2000*.

The ICTSMS report recommends measures be introduced which will improve the environment for adjacent residents, pedestrians and cyclists while allowing the road to carry a large volume of vehicles. A balance is to be struck which factors reasonable mobility for road users, and an acceptable quality of the residential environment for adjacent communities.

This Plan for the 3.5 km section of Elbow Drive S.W. from 26th Avenue south to 58th Avenue consists primarily of physical streetscape improvements including central medians, better crosswalks, street trees, and feature street lighting. Elements of the plan are to reinforce the residential context, improve pedestrian and driver safety, and reduce vehicular speed. For the most part the Plan employs passive traffic management techniques which focus on modifying driver behavior without reducing vehicular capacity.

SETTING

Elbow Drive is primarily residential, with some local commercial activity at 50th and 58th Avenues.

This 'Secondary Road' carries about 30,000 vehicles per day (1998 figure), and serves the #3 bus route.

The existing road has two northbound and two southbound lanes of traffic. Parking is not permitted within the four lane cross section of Elbow Drive.

Pedestrian use is notable for access to the Elbow River pathway system, school crossings at 38th Avenue, Sifton Boulevard and 47th Avenue, and numerous bus stops.

PLAN ELEMENTS

- Elbow Drive S.W. to remain as a four lane road.
- Formalize parking function between 29th & 32nd Avenues.
- 'On street' parking is not recommended at any time.
- Install central treed medians at various locations along Elbow Drive to alter the continuity of the route, and enhance the residential character.
- Embark on a street tree upgrading program for the entire route.
- Install sidewalk 'missing links'.
- Improve the visibility & safety of pedestrian crosswalks.
- Install 'corner bulbs' on selected avenues intersecting Elbow Drive. 'Corner bulbs' are not proposed within the four lane cross section of Elbow Drive itself.
- Install decorative street lights to reinforce the residential theme and provide more uniform light levels. Capitalize on opportunities to relocate existing overhead utility lines underground.
- Provide street furnishings of a consistent historically derivative style to enhance the streetscape.
- Reconfigure specific intersections:
 - 5th Street: in accordance with the conversion of 5th Street S.W. to two-way.
 - 29th Avenue: realign to a conventional 'T' intersection.
 - 30th Avenue: eliminate the separate right turn lane from southbound Elbow Drive to eastbound 30th Avenue.
 - Sifton Boulevard: reconfigure to a conventional signalized 'T' intersection.
 - Lansdowne / Riverdale Avenue: undertake modest alterations to the existing traffic circle to moderate traffic speed, improve pedestrian safety, and enhance aesthetics.
 - Crescent Boulevard: reconfigure the north end of 6th St. S.W.
 - 58th Avenue: minor changes to enhance pedestrian crosswalks and improve vehicular movements.

PROJECT COST SUMMARY

LOCATION	AMOUNT
26th. Avenue to North of 30th. Avenue	\$671,680.50
30th. Avenue Intersection	\$141,230.00
South of 30th. Avenue to North of 34th. Avenue	\$362,365.00
32nd. Avenue Intersection	\$97,844.50
34th. Avenue to North of 38th. Avenue	\$213,092.00
38th. Avenue Intersection	\$115,937.00
South of 38th. Avenue to Elbow River	\$144,491.50
Lansdowne Intersection	\$388,625.00
South of Lansdowne Intersection to North of Imperial Way	\$574,141.00
North of Imperial Way to North of 50th. Avenue	\$269,003.50
47th. Avenue Intersection	\$54,220.00
49th. Avenue Intersection	\$76,037.00
50th. Avenue Intersection	\$144,465.00
South of 50th. Avenue to North of 53rd. Avenue	\$365,413.00
North of 53rd. Avenue to North of 58th. Avenue	\$283,321.00
58th. Avenue Intersection	\$252,444.00
TOTAL:	\$4,154,310.00

* excludes contingency and G.S.T.

PUBLIC INVOLVEMENT

A group of citizens was assembled at the onset to assist in the planning process. This group included persons representing the communities along Elbow Drive, nearby and 'downstream' communities and other stakeholders. Three sessions were held with this group, followed by two larger 'Public Review Sessions'. The larger sessions included exhibits, a presentation, question and answer session, and questionnaires for attendees.

Public support for the initiative as expressed at stakeholder and Public Review Sessions, and through questionnaires can be characterized as 'polarized'. In very general terms one camp preferred to retain the status quo and maintain traffic mobility. The other camp supported the inclusion of active and passive traffic calming measures to slow traffic and improve the quality of life in their communities. Major elements recommended in the Technical Review Panel Report, such as reconfiguration of the Lansdowne Avenue traffic circle were not supported by any reasonable interpretation of public input.

As a result of the public involvement, the Plan was modified to reflect public sentiment, as follows:

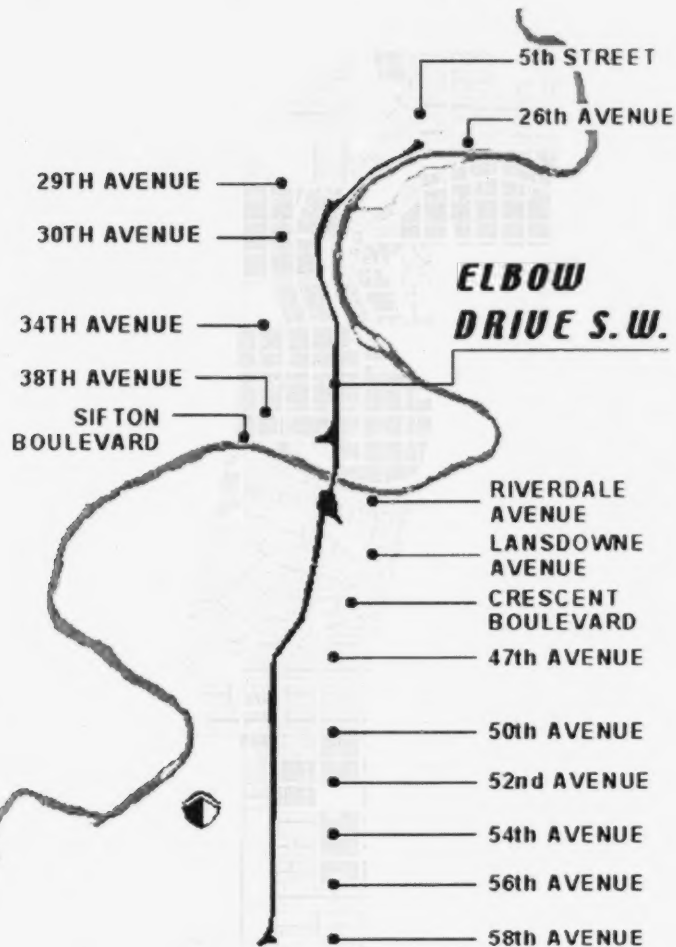
- A number of corner bulbs on crossing roads were eliminated north of the Elboya bridge.
- Corner bulbs on all crossing roads, were eliminated south of the Elboya bridge.
- The Lansdowne traffic circle is retained 'as is' (more or less), with modest alterations.
- The 58th Avenue intersection is retained 'as is' (more or less), with modest alterations.

CLOSE

The Urban Design & Traffic Management Plan is consistent with a number of the stated objectives for Elbow Drive in that:

- Proposals in the Plan, such as treed medians where space permits, will alter the character and appearance of the road at specific locations, and communicate to drivers that they are in a residential area, and not on a high speed route. Improved pedestrian crossings, and an enhanced streetscape will contribute positively to the 'Community & Environmental Quality' side of the triangle.
- Mobility is maintained for road users - Elbow Drive remains as a four lane road with two north and two south bound lanes. Present traffic volumes can be accommodated without significant delays in travel time through the corridor.

KEY PLAN - ELBOW DRIVE S.W.
26TH AVENUE TO 58TH AVENUE



BACKGROUND

PROJECT PURPOSE

The purpose of this project is to formulate a plan for Elbow Drive S.W. consisting of physical streetscape alterations and / or traffic management techniques. Elements of the plan are to enhance the residential context, improve safety and moderate vehicular speed, while still allowing the road to carry large volumes of traffic. A balance is to be struck which factors reasonable mobility for downstream commuters, and an acceptable quality of the residential environment for affected communities.

PROJECT LOCATION

The project area encompasses a 3.5 kilometre section of the Elbow Drive corridor from 26th Avenue S.W. to 58th Avenue S.W., with the following notations:

- reconfiguration of the 5th Street / Elbow Drive intersection is excluded from this project; work of this project is to mesh with the concurrent 5th Street / 2nd Street design initiative, which is being undertaken as a separate project
- reconfiguration of the Sifton Boulevard / Elbow Drive intersection reconfiguration is excluded from this project; work of this project is to mesh with the concurrent Sifton Boulevard design initiative, which is being undertaken as a separate project

CONTEXT

Elbow Drive S.W. is one of Calgary's scenic residential routes. This area, from 26th Avenue to 58th Avenue S.W. can be characterized as a pleasurable driving road with tree lined boulevards, the Elbow River, parks and green spaces, and notable early 20th century homes providing interest along the route. The road curves through the communities of Elbow Park, Elboya and Britannia, before heading in a straight line south through Windsor Park to Meadowlark Park at 58th Avenue S.W.

Land use is almost exclusively single family residential on a grid pattern in the earlier developed areas of Elbow Park, north Elboya and Windsor Park, with curvilinear streets in the later developed areas of Elboya and Britannia. Some

multi family use is located near 50th and 58th Avenues; large estate lots and villa type condominiums occupy much of the west side of Elbow south of 50th Avenue S.W. Commercial use is limited to neighborhood services around the 50th Avenue intersection.

Elbow Drive is a four lane undivided road accommodating large volumes of north / south traffic to and from the downtown core, and serves the major #3 bus route. Average (1998) traffic volumes of approximately 30,000 vehicles per day are at the upper end of Elbow Drive's description as a 'Secondary Route' (see *Appendices - 'Inner City Road Descriptions'*). Highest volumes on the corridor are generated by east / west destined traffic using the short section of Elbow Drive between Sifton Boulevard and Lansdowne Avenue.

The road accommodates two northbound and two southbound lanes of traffic, and on average has a pavement width of approximately 14.0 metres. Parking is not permitted at any time within the four driving lanes; separate parking lanes adjacent the road are limited to a section on the west side of the road in Elbow Park, and adjacent Burt's Store at 50th Avenue S.W.

There are numerous driveways and lanes accessing Elbow Drive; typically, a new road with a 'Secondary Route' description, would exclude direct access except for commercial and institutional uses.

Pedestrian use is typically east / west across Elbow, with notable use for:

- school crossings at 38th Avenue, Sifton Boulevard, and 47th Avenue
- access to the Elbow River and pathway system at 5th Street, Garden Crescent, 30th, 32nd and 34th Avenues and at the Elboya Bridge area
- access to the Britannia Shopping Centre at 49th and 50th Avenues
- numerous bus stops along the route

PROJECT ORIGINS

The Elbow Drive S.W. Urban Streetscape Design & Traffic Management Plan originates from the *Calgary Transportation Plan (GoPlan)* of 1995, and the subsequent *Inner City Transportation System Management Strategy (ICTSMS)* of 2000.

Calgary Transportation Plan (GoPlan)

This strategic broad based City wide plan endeavors to balance the realities of Mobility, Quality of Life and Cost, and advocated the following concerning the Inner City:

"Maintaining healthy and vibrant communities capable of adapting to change, and attracting a reasonable share of growth is a key thrust of the proposed land use strategy. In order to achieve the forecast levels of growth in established communities, the impact of the road hierarchy, its operation and adjacent land uses beneath the "skeletal" network level should be reviewed. There are aspects of the existing hierarchy (e.g., widening setbacks, reverse lanes, road classifications, etc.) which may be at odds with community objectives related to quality of life and the ongoing viability of local businesses adjacent to roadways. These have to be considered in the context of city-wide goals as expressed in the Calgary Transportation Plan; however, it is recognized that attracting growth into existing communities is just as dependent on certainty, and quality of environment as it is in the new suburbs."

from 'Calgary Transportation Plan', page 2-3

Inner City Transportation System Management Strategy (ICTSMS)

This study examined the role and function of significant streets and roads in the Downtown and Inner City areas. Elbow Drive S.W. is one of those corridors. Issues and recommendations identified in the ICTSMS for Elbow Drive S.W. and other routes were developed through a series of public meetings, community representative 'Round Tables', and a Technical Committee review of the ICTSMS recommendations. The ICTSMS states:

"...the Inner City Strategy is now to focus on ensuring the main routes can carry appropriate levels of traffic while focusing on traffic calming and driver behavior, particularly safety, and creating the optimal environment for transit, pedestrians and cyclists.

from 'ICTSMS Report', page 6

"Business, community and general public input to the study has been emphatic about the need to balance the needs of Calgarian's mobility with the preservation of established communities, the Downtown commercial core and surrounding business districts. With the growth forecasted for Calgary, it is unreasonable to expect that traffic volumes will decline in the Inner City area. However, the ICTS has attempted to identify appropriate infrastructure and operational improvements and traffic calming measures that can be considered through local traffic studies, that can mitigate the impacts of through and commuter traffic."

from 'ICTSMS Report', page 8

**INNER CITY TRANSPORTATION
SYSTEM MANAGEMENT STRATEGY PRINCIPLES**

The goal of the ICTSMS is to:

"...achieve an equitable balance between community integrity and safe and reasonable mobility in the inner city...guided by the following principles:"

- The safety, integrity & health of communities must be a priority.
- Quality of life in the Inner City should not be threatened by increasing traffic volumes into and out of the Downtown.
- Except for skeletal network improvements as identified in the CTP, increased capacity of arterial roads should be achieved through operational changes, not by major roadway construction.
- Public transportation solutions must be maximized.
- The long term focus should be on traffic reduction, not merely traffic diversion.
- The reduction of automobile dependency is a priority.
- Major city road corridors must be improved to alleviate inappropriate traffic volumes on inner city streets.
- Calgarians must be made aware of the negative effects of traffic on communities.
- Pedestrian & cycling opportunities are to be developed to provide a more attractive travel option.

*(extracted and summarized from the Inner City
Transportation System Management Strategy,
page 9)*

ICTSMS OBJECTIVES FOR ELBOW DRIVE S.W.

GENERAL OBJECTIVE

The ICTSMS report recommends measures be implemented which will improve the environment for residents, pedestrians and cyclists while allowing road to carry a large volume of vehicular traffic.

SPECIFIC OBJECTIVES

Specific recommendations in the Council approved ICTSMS report are as follows:

- Elbow Drive S.W. be described as a 'Secondary Route.'
(see Appendices for 'Inner City Road Descriptions')
- Subject to broad community consultation, A 40 km/h zone be established between 26th & 58th Avenues S.W.
 - (the 40 km/h issue is not an area of examination within this Elbow Drive S.W. Urban Streetscape Design & Traffic Management Plan)
- An urban design/streetscape plan be prepared for the corridor, with the following guidance (from the ICTSMS Technical Review Panel Report #12):
 - Automobile capacity is not to be increased by design improvements; control volumes through improvements which reduce traffic speed, increase pedestrian safety and establish a high quality environment respectful of the surrounding residential neighborhoods.
 - 30 km/h zones should be reviewed when establishment of a 40 km/h zone is being considered.
 - (as the 40 km/h issue is not an area of examination within this plan, the review of 30 km/h zones is not applicable)

- Physical improvements and traffic calming measures be implemented to improve and change the character of the roadway, emphasize the residential character and reduce vehicle speeds by communicating to drivers through the appearance of the streetscape that they are not on a high speed commuter road. It is acknowledged the above noted approach may not reduce traffic volumes, but may however, reduce the rate of increase in traffic.
- Replace the Lansdowne Avenue traffic circle with a conventional signalized intersection, and eliminate free flowing right turns.
- Modify the Sifton Boulevard intersection to reduce free flowing traffic movements.
- Improve safety for pedestrians, with emphasis on enhancing crosswalks, historic type lighting, and consideration for more pedestrian activated signals (in accordance with the City's overall strategies and implementation policies).
- Manage timing of signalization to moderate traffic flow and speed.
- Consider off-peak, on-street parking in selected areas if it can be safely accommodated.
- Emphasize the residential character of the area by adding treed medians, corner bulbs and reducing pavement widths.
- Undertake aesthetic improvements such as character lighting, bollards, historic interpretive plaques, landscaping and textured pavements.
- Install 'gateway' features to remind drivers they are entering residential areas.
- The Urban Streetscape Design & Traffic Management Plan is to be implemented in consultation with the adjacent communities along the route.
- Assess the possible spill-over effects of the Plan on adjacent neighborhoods.

PROPOSED PLAN

GENERAL

- Elbow Drive S.W. to remain as a four lane road (2 driving lanes each way), with an ideal cross section of 14.0 meters (4 driving lanes x 3.5 meters per lane).
- The existing full time parking function is to be formalized between 29th & 32nd Avenues (dedicated parking lane - with allowance for bus stops)
- Given safety concerns & high traffic volumes, 'on street' parking is not recommended at any time:
 - The historic pattern of vehicular use is 4 traffic lanes; traffic volumes at 23,000 to 36,000 vehicles per day are at the upper end of the Secondary Route (residential) description.
 - Driveways to residences are located along the route - these driveways are not consistent by locale and/or separation, and as such are not easily apparent to passing motorists.
 - 'On street' parking will conflict with orderly transit and road maintenance operations.
- Install central 3.5 meter treed medians (utility verification permitting) at various locations along Elbow Drive S.W. to alter the visual continuity of the route, and enhance the residential character of the area.
- Embark on a street tree upgrading program for the entire route to ensure Elbow Drive remains one of Calgary's scenic corridors:
 - Preserve existing key specimens.
 - Undertake new tree planting in existing boulevards where the boulevard width is satisfactory (2.0 meters plus), and utilities are not compromised.

- Undertake new tree planting in new boulevards where utilities are not in conflict - establish new boulevards at a minimum width of 2.0 meters.
 - Remove existing trees which compromise visual access for pedestrians and drivers or are safety hazards.
 - Encourage, by City promotional and informational efforts, street tree planting on adjacent private property where planting in the City property is not feasible.
 - Develop the street tree program in consultation with the City's Urban Forest Specialist.
-
- Install sidewalk 'missing links'.
 - Where sidewalks are at curb edge (i.e: mono) widen to minimum of 2.0 meters; where sidewalks are separate from curb, and the existing boulevard is too narrow for planting - widen sidewalks to the curb edge.
 - Improve the legibility & safety of 'higher volume' pedestrian crosswalks with enhanced materials and textures; improve 'lower volume' crosswalks with improved geometry & markings.
 - Install 'corner bulbs' on selected avenues intersecting Elbow Drive - enhance the bulbs (where appropriate) with upgraded pavements & bollards. 'Corner bulbs' are not proposed within the four lane cross section of Elbow Drive itself.
 - Embark on a street light upgrading program - install decorative historically derivative street lights to reinforce the residential theme and provide more uniform light levels. In concert with the street lighting program, capitalize on opportunities to relocate existing overhead utility lines underground.
 - Provide street furnishings (benches, bus shelters, bollards, waste receptacles) of a consistent historically derivative style, or styles to enhance the streetscape.

- Reconfigure specific intersections:
 - 5th Street S.W. at Elbow Drive: in accordance with the conversion of 5th Street S.W. to two-way.
 - 29th Avenue S.W. at Elbow Drive: realign to a conventional 'T' intersection.
 - 30th Avenue S.W. at Elbow Drive: eliminate the separate right turn lane from southbound Elbow Drive to eastbound 30th Avenue.
 - Sifton Boulevard at Elbow Drive: reconfigure to a conventional signalized 'T' intersection.
 - Lansdowne/Riverdale Avenues at Elbow Drive: undertake modest alterations to the existing traffic circle to moderate traffic speeds, increase legibility for vehicles and pedestrians, improve crosswalks and enhance the aesthetics of the area.
 - Crescent Boulevard S.W. at Elbow Drive: reconfigure the north end of 6th Street S.W. to improve crosswalk characteristics and eliminate a potentially unsafe 'five pointed' intersection.
 - 58th Avenue S.W. at Elbow: minor modifications to enhance pedestrian crosswalks and improve vehicular turning movements to and from this intersection.

TRANSPORTATION COMMENTARY

GENERAL

The proposed Urban Streetscape Design & Traffic Management Plan for Elbow Drive is consistent with the objectives of the ICTSMS.

The thrust of this plan is inherently rooted in modifying the visual characteristics of the roadway through passive traffic calming techniques, such as the addition of landscaped medians, street trees, upgraded crosswalks, and feature street lighting which will renew the 'residential' ambience of Elbow Drive, and communicate to drivers that they are not on a high speed road.

This physical changes proposed in this Concept Plan are compatible with various operational road speeds, and will very well serve to accommodate 30, 40, 50, or for that matter 60 km/hr. limits. This Concept Plan observes the existing status quo concerning speed limits on Elbow Drive, without recommendation on a 40 km/hr. limit, and for that matter review of the existing 30 km/hr. playground zone in Elbow Park.

Significant analysis was done at the intersection of Lansdowne Drive / Riverdale Avenue with Elbow Drive, concerning elimination of the existing traffic circle and replacing it with a conventional 4-way signalized intersection, as recommended in the ICTS Technical Review Panel Report. Two options were produced, (3A and 3B) illustrating potential 4-way intersection configurations. Of these, Option 3B was deemed to be satisfactory in terms of maintaining acceptable traffic flows through the intersection, if combined with the optimization and coordination of traffic signals at the revised Sifton Boulevard intersection. Notwithstanding the above, the stakeholder support for a proposed 4-way solution at Lansdowne was limited, and as such, the recommended treatment at Lansdowne / Riverdale is Option 2 - a retrofit of the existing circle, which has minor traffic flow implications, but serves to improve pedestrian movement and enhance the visual quality of the area by removing redundant asphalt and hard surface median areas.

The 30th Avenue / Elbow Drive Intersection was also analyzed in some detail, with the final design as illustrated on the Concept Plan. The existing free right turn lane from southbound Elbow to westbound 30th has been removed, and replaced with a corner bulb extension. It is acknowledged that the removal of the free flowing right turn will cause some delay; this delay however, is deemed acceptable in terms of the accrued benefits to protection of the adjacent parking lane to the north and reduction of the pedestrian crossing length across Elbow Drive.

- On northbound Elbow at 30th Avenue, the separate left turn has been retained, with more or less the same queuing length as existing. Immediately south of the queuing lane the existing 'painted line median' has been replaced with a raised landscaped median. From time to time, during peak periods, left turning traffic encroaches on the 'painted line median'. Installation of the raised landscaped median will remove this 'overflow' queuing area. The elimination of the overflow queuing area is not deemed to be a significant impact when evaluated against the benefits of the raised landscaped median to reduce the perceived road width in this location.
- Impacts of the Plan proposals at 30th Avenue - the elimination of the separate south to westbound right turn and the reduced 'extra' queuing length for the northbound left turn can be addressed by optimizing the signal timing at this intersection which facilitates the northbound left turns onto 30th Avenue, and reduces the queue lengths for this movement. Applying an optimized signal timing plan, the performance analysis indicated that the average vehicle delay of the intersection could be reduced significantly, due to the reduced delay for the northbound left turning vehicles. Removal of the southbound dedicated right turn lane can be compensated for by increasing the southbound green time. Applying the optimized signal timing plan, the proposed shared southbound right turn / through volume to capacity is expected to remain below the limit of 0.90.

Sifton Boulevard was not analyzed or reviewed as separate designs / analyses for Sifton Boulevard are being prepared by others. Elements proposed in this Plan for Elbow Drive have no appreciable effect on Sifton Boulevard.

PROJECT SPECIFICS

26TH AVENUE S.W. TO 34TH AVENUE S.W.

- Develop 'gateway' element at 5th Street & Elbow Drive to communicate to drivers their presence in a residential area.
- Improve crosswalk and access to pathway system at Garden Crescent; the pathway should be elevated to the same level as the road to improve visibility and eliminate the need for steps down to the pathway.
- Renconfigure the intersection at 29th Avenue by eliminating the central landscaped island and the angled entry and exit to 29th from Elbow Drive, and install a crosswalk (none exists). These changes will improve sight lines and reduce total crosswalk length and pavement area. The width of 29th at Elbow should be at least three lanes to permit orderly right turns, without waiting for vehicles attempting a left turn on to northbound Elbow.
- **Between 29th and 30th Avenues:**
 - Reconfigure the northerly connection around the landscaped island to Elbow Drive.
 - Enlarge and landscape the 'island', to reduce unnecessary paved areas.
 - Install 3.5 metre wide central treed and landscaped median in Elbow Drive, to reduce 'perceived' road width.
 - Formalize the existing parking on the west side of Elbow Drive in this area.
 - Install a corner bulb on the west side of Elbow Drive immediately north of 30th Avenue, eliminating the separate right turn bay from southbound Elbow Drive to westbound 30th Avenue. This reduces pedestrian crossing lengths, improves visibility and defines the end of the off-street parking lane.
 - Improve crosswalk at 30th Avenue and Elbow Drive (major), with enhanced materials, and geometric improvements to align directly with the entry to Jerry Shaw Park.

- **Between 30th and 32nd Avenues:**
 - Formalize the existing full time parking on the west side of Elbow Drive, with accommodation for the existing bus stop south of 30th Avenue.
 - Install a 3.5 metre wide central treed and landscaped median in Elbow Drive, to reduce 'perceived' road width; this landscape island replaces the existing painted line 'median'.
 - Note: the separate left turn lane from northbound Elbow to 30th Avenue remains.
- Improve crosswalk (major) at 32nd Avenue with enhanced materials, and geometric improvements to align directly with the pedestrian bridge over the Elbow River. This realignment should be designed to maximize sight lines for drivers, pedestrians and cyclists. Existing vegetation obscuring visual access should be removed, and design elements installed (bollards, etc.) to communicate to pathway users that they are approaching a busy road.
- Install small corner bulbs on 32nd Avenue at Elbow to reduce the 'throat' of 32nd, and discourage left turns from northbound Elbow.
- Improve crosswalk (minor) at 34th Avenue with geometric improvements to better align directly with the pathway at the south end of Woods Park. This realignment should be designed to optimize sight lines for drivers, pedestrians and cyclists. Design elements should be installed (bollards, etc.) to communicate to pathway users that they are approaching a busy road.
- Realign and develop the existing pathway system from 4th Street S.W. to the south end of Woods Park to a consistent width of 3.0 or 3.5 meters to accommodate pedestrians and cyclists.

34TH AVENUE S.W. TO SOUTH OF ELBOW RIVER

- On the east side of Elbow Drive from the south end of Woods Park to 36th Avenue install a separate combined sidewalk / pathway at 3.0 metres wide. This sidewalk / pathway will accommodate off street cycle traffic from the Woods Park pathway system to 36th Avenue where the on-street cycle route can continue down 5th Street to the Elboya bridge.
- Improve crosswalks (minor) at 36th Avenue with geometric modifications.
- Improve crosswalks at 38th Avenue and Elbow Drive (major), with enhanced materials, and geometric improvements. These changes will improve sight lines and reduce total crosswalk length at this signalized school crossing.
- Elboya Bridge - review pedestrian sidewalks on bridge (the carriage way width meets minimum standards for vehicles, however, sidewalk widths are too narrow to effectively accommodate pedestrians and cyclists).
- Reconstruct the existing hard surface median immediately north of Sifton Boulevard (materials are in a deteriorated condition).
- Sifton Boulevard / Elbow Drive: this intersection has been reconfigured to a conventional 'T' signalized form through another planning process. Separate free flowing traffic lanes to and from Elbow Drive have been eliminated, and a left turn from Sifton Boulevard to Elbow Drive has been added. New crosswalks with enhanced materials, and geometric improvements will be added.

RIVERDALE AVENUE S.W. TO IMPERIAL WAY S.W.

- **Traffic Circle at Riverdale Avenue & Lansdowne Avenue:**
 - Elbow Drive through the traffic circle will remain unchanged.
 - On the west circle (Riverdale side), one of the two through lanes across Elbow Drive to Lansdowne is removed.
 - On the east circle (Lansdowne side), one of the two lanes from Lansdowne to northbound Elbow is eliminated.
 - On the southeast corner of the circle one of the two lanes from northbound Elbow to eastbound Lansdowne is removed.
 - Improve all circle crosswalks (major), with enhanced materials, and geometric improvements to align directly with the entry.
 - The above noted modifications are proposed to reduce pedestrian crossing distances, eliminate excessive pavement widths, reduce vehicular conflict on short two lane road areas and improve the aesthetics of the area.
- **Lansdowne Avenue to Britannia Drive:**
 - Increase mono sidewalk widths on both side of Elbow Drive to 2.0 metres (steep side slopes abutting the road preclude the installation of separate sidewalks).
- **Britannia Drive to Crescent Boulevard:**
 - Install central 3.5 metre wide treed and landscaped medians in Elbow Drive. The space to accommodate the medians will be realized by moving the east curb line further to the east, where the existing road Right-of-Way and boulevard is generous.
 - Increase mono walks on the west side to 2.0 metres wide (side slopes abutting the road preclude the installation of separate sidewalks); sidewalks on the east side are to remain separate.

- Change 6th street S.W. at Crescent Boulevard to a 'right out', landscape abandoned road area and retain space for community entry sign in the reclaimed are. These modifications will improve crosswalk characteristics and eliminate the 'five pointed' intersection.
- Improve crosswalks (minor), at Britannia Drive, Madison Avenue and Crescent Boulevard with geometric modifications.
- **Crescent Boulevard to Imperial Way:**
 - Increase mono sidewalk widths on the west side of Elbow Drive to 2.0 metres (side slopes abutting the road preclude the installation of separate sidewalks).

47TH AVENUE S.W. TO 53RD AVENUE S.W.

- **47th Avenue to 50th Avenue:**
 - Install a short treed and landscaped 3.5 metre wide median immediately north of 49th Avenue to replace the existing painted line 'median'.
 - Improve crosswalks. (major) at 47th Avenue (signalized school crossing), 49th Avenue (Britannia Shopping Centre) and 50th Avenue, with enhanced materials, and geometric improvements.
 - Eliminate the existing separate free flowing right turn from 50th Avenue to northbound Elbow Drive, replacing it with an abutting right turn bay.
- **50th Avenue to 53rd Avenue:**
 - Install three central 3.5 metre wide treed and landscaped medians in Elbow Drive from north of 51st Avenue to south of 52nd Avenue. The space to accommodate the medians will be realized by moving the west curb line further to the west, where the existing road Right-of Way and boulevard is generous.
 - Improve crosswalks (minor), at 51st, 52nd and 53rd Avenues, with geometric modifications.

53RD AVENUE S.W. TO 58TH AVENUE S.W.

- Complete 'missing' sidewalk links on the west side of Elbow Drive.
- Improve crosswalks (minor), at 54th, 55th, 56th and 57th Avenues, with geometric modifications.
- **58th Avenue Intersection:**
 - Modify the existing concrete medians from 57th to 58th and south of 58th Avenue to a combination of 3.5 metre wide treed and landscaped areas, and narrower hard surfaced areas.
 - Install a short treed and landscaped 3.5 metre wide median in 58th Avenue at the approach to Elbow Drive.
 - All medians at the 58th Avenue intersection should be designed to ensure proper vehicular turning movements, especially from southbound Elbow Drive to eastbound 58th Avenue, and if possible should accommodate a pedestrian 'refuge'. Vehicular sight lines in this area should be reviewed to confirm the appropriateness of tree locations.
 - Remove a portion of the road area on the south side of 58th Avenue at Meadowview Road, and reconfigure the Meadowview / 58th Avenue intersection to a more conventional 'T' shape. These modifications are proposed to simplify potentially conflicting vehicular turning movements to and from Meadowview Road, 58th Avenue and Elbow Drive. Note: two homes at this location will lose the adjacent on street parking with this modification.
 - Improve crosswalks. (major) at the 58th Avenue intersection, with enhanced materials, and geometric improvements.

PROJECT COST SUMMARIES

BASIS FOR COSTING

The following construction cost estimates are based on Concept Plans presented in this report, and are preliminary in nature, providing an 'Order of Magnitude' basis to assist in establishing construction budgets. Costs are exclusive of construction contingencies, engineering, administration and GST.

Demolition and Removals: includes costs for removal and disposal of existing curbs, gutters, asphalt, sidewalks and other miscellaneous items in line with proposed work. Existing items that are not affected by the proposed work are deemed to remain 'as is'.

Utility Relocation: is described as T.B.D. - to be determined, and refers to existing overhead power lines. Overhead power is extensive through the length of the corridor; removal to underground is preferred to improve the aesthetics of the roadway. As relocation is (relatively) expensive, this operation would be preferably undertaken on an 'opportunity basis', i.e: where relocation to underground is a preference of the affected utilities and can be completed at 'no cost' to the project. Relocation of existing overhead street lighting power is included in the line item for 'Lighting'.

Storm Drainage: includes adjustments required to install modifications (new and / or relocated catch basins, manholes and leads, etc.) to the existing underground storm sewer system, to accommodate medians, curb extensions, and other design features.

Road Works: costs are based upon City of Calgary specifications for curb, gutter and asphalt road surfaces.

Sidewalks: costs are based on the City of Calgary specifications for plain concrete walks.

Lighting: costs for the supply and installation of new poles, luminaires and underground distribution is based on the 'Eau Claire Pendant with Shade and Stepped Pole', custom colour. A total of approximately 105 units are suggested which equates to a straight line spacing equivalent to 33 metres on centre, for the 3.5 km. corridor. The units would actually be staggered, or located in the central medians as 'double arm' fixtures, with an actual straight line spacing equivalent of around 40 - 50 metres on centre. Extra fixtures would be located at intersections, and other areas where additional light is required. The total lighting budget estimate is \$735,000.00.

Site Furnishings: includes benches, bollards, bus shelters, benches and waste receptacles, etc.

LOCATION	AMOUNT
26th. Avenue to North of 30th. Avenue	\$671,680.50
30th. Avenue Intersection	\$141,230.00
South of 30th. Avenue to North of 34th. Avenue	\$362,365.00
32nd. Avenue Intersection	\$97,844.50
34th. Avenue to North of 38th. Avenue	\$213,092.00
38th. Avenue Intersection	\$115,937.00
South of 38th. Avenue to Elbow River	\$144,491.50
Lansdowne Intersection	\$388,625.00
South of Lansdowne Intersection to North of Imperial Way	\$574,141.00
North of Imperial Way to North of 50th. Avenue	\$269,003.50
47th. Avenue Intersection	\$54,220.00
49th. Avenue Intersection	\$76,037.00
50th. Avenue Intersection	\$144,465.00
South of 50th. Avenue to North of 53rd. Avenue	\$365,413.00
North of 53rd. Avenue to North of 58th. Avenue	\$283,321.00
58th. Avenue Intersection	\$252,444.00
TOTAL:	\$4,154,310.00

* excludes contingency and G.S.T.

Location:

26th Avenue to North of 30th Avenue

A	Demolition & Removals	\$57,000.00
B	Utility Relocation	TBD
C	Storm Drainage	\$40,000.00
D	Road Works	\$112,000.00
E	Sidewalks	\$34,000.00
F	Crosswalks	\$4,000.00
G	Lighting	\$105,000.00
H	Site Furnishings	\$34,000.00
I	Landscaping	\$140,000.00
J	Miscellaneous Items	\$55,000.00
K	Gateway Feature	\$30,000.00
L	Asphalt Pathway	\$81,000.00
Subtotal		\$692,000.00

Location: 30th Avenue Intersection

A	Demolition & Removals	\$6,000.00
B	Utility Relocation	TBD
C	Storm Drainage	\$20,000.00
D	Road Works	\$21,000.00
E	Sidewalks	\$22,500.00
F	Crosswalks	\$30,000.00
G	Lighting	\$14,000.00
H	Site Furnishings	\$18,000.00
I	Landscaping	\$10,000.00
Subtotal		\$141,500.00

Location:

**South of 30th Avenue to North of 34th Avenue
(Excluding 32nd Avenue Intersection)**

A	Demolition & Removals	\$40,000.00
B	Utility Relocation	TBD
C	Storm Drainage	\$20,000.00
D	Road Works	\$85,000.00
E	Sidewalks	\$50,000.00
F	Crosswalks	\$3,500.00
G	Lighting	\$56,000.00
H	Site Furnishings	\$5,000.00
I	Landscaping	\$65,000.00
J	Asphalt Pathway	\$39,000.00
Subtotal		\$363,500.00

Location: 32nd Avenue Intersection

A	Demolition & Removals	\$6,000.00
B	Utility Relocation	TBD
C	Storm Drainage	\$30,000.00
D	Road Works	\$11,000.00
E	Sidewalks	\$15,000.00
F	Crosswalks	\$15,000.00
G	Lighting	\$7,000.00
H	Site Furnishings	\$10,000.00
I	Landscaping	\$3,000.00
Subtotal		\$97,000.00

Location: 34th Avenue to North of 38th Avenue

A	Demolition & Removals	\$5,000.00
B	Utility Relocation	TBD
C	Storm Drainage	\$0.00
D	Road Works	\$0.00
E	Sidewalks	\$78,000.00
F	Crosswalks	\$4,000.00
G	Lighting	\$70,000.00
H	Site Furnishings	\$30,500.00
I	Landscaping	\$27,000.00
Subtotal		\$214,500.00

Location: 38th Avenue Intersection

A	Demolition & Removals	\$5,000.00
B	Utility Relocation	TBD
C	Storm Drainage	\$40,000.00
D	Road Works	\$9,000.00
E	Sidewalks	\$15,000.00
F	Crosswalks	\$23,000.00
G	Lighting	\$7,000.00
H	Site Furnishings	\$13,000.00
I	Landscaping	\$0.00
J	Miscellaneous Items	\$4,000.00
Subtotal		\$116,000.00

Location:

**South of 38th Avenue to Elbow River (Excluding
38th Avenue Intersection and Sifton Blvd.)**

A	Demolition & Removals	\$4,000.00
B	Utility Relocation	TBD
C	Storm Drainage	\$20,000.00
D	Road Works	\$12,000.00
E	Sidewalks	\$20,000.00
F	Crosswalks	\$1,500.00
G	Lighting	\$56,000.00
H	Site Furnishings	\$11,500.00
I	Landscaping	\$15,000.00
J	Miscellaneous Items	\$5,000.00
Subtotal		\$145,000.00

Location: Lansdowne Intersection

A	Demolition & Removals	\$35,000.00
B	Utility Relocation	T.B.D.
C	Storm Drainage	\$20,000.00
D	Road Works	\$36,000.00
E	Sidewalks	\$41,000.00
F	Crosswalks	\$44,550.00
G	Lighting	\$49,000.00
H	Site Furnishings	\$38,000.00
I	Landscaping	\$101,500.00
J	Miscellaneous Items	\$25,000.00
Subtotal		\$390,050.00

Location:

**South of Lansdowne Intersection to North of
Imperial Way**

A	Demolition & Removals	\$50,000.00
B	Utility Relocation	TBD
C	Storm Drainage	\$60,000.00
D	Road Works	\$80,000.00
E	Sidewalks	\$118,000.00
F	Crosswalks	\$10,000.00
G	Lighting	\$98,000.00
H	Site Furnishings	\$28,000.00
I	Landscaping	\$98,000.00
J	Miscellaneous Items	\$32,000.00
Subtotal		\$574,000.00

Location:

**North of Imperial Way to North of 50th Avenue
(Excluding 47th and 49th Intersections)**

A	Demolition & Removals	\$15,000.00
B	Utility Relocation	TBD
C	Storm Drainage	\$0.00
D	Road Works	\$21,000.00
E	Sidewalks	\$63,000.00
F	Crosswalks	\$5,500.00
G	Lighting	\$70,000.00
H	Site Furnishings	\$21,500.00
I	Landscaping	\$64,000.00
J	Miscellaneous Items	\$10,000.00
Subtotal		\$270,000.00

Location: 47th Avenue Intersection

A	Demolition & Removals	\$0.00
B	Utility Relocation	TBD
C	Storm Drainage	\$0.00
D	Road Works	\$0.00
E	Sidewalks	\$2,500.00
F	Crosswalks	\$37,000.00
G	Lighting	\$7,000.00
H	Site Furnishings	\$0.00
I	Landscaping	\$3,000.00
J	Miscellaneous Items	\$5,000.00
Subtotal		\$54,500.00

Location: 49th Avenue Intersection

A	Demolition & Removals	\$3,000.00
B	Utility Relocation	TBD
C	Storm Drainage	\$0.00
D	Road Works	\$4,500.00
E	Sidewalks	\$11,500.00
F	Crosswalks	\$46,500.00
G	Lighting	\$7,000.00
H	Site Furnishings	\$0.00
I	Landscaping	\$0.00
J	Miscellaneous Items	\$5,000.00
Subtotal		\$77,500.00

Location: 50th Avenue Intersection

A	Demolition & Removals	\$11,000.00
B	Utility Relocation	\$0.00
C	Storm Drainage	\$20,000.00
D	Road Works	\$10,000.00
E	Sidewalks	\$13,500.00
F	Crosswalks	\$43,000.00
G	Lighting	\$14,000.00
H	Site Furnishings	\$0.00
I	Landscaping	\$3,500.00
J	Miscellaneous Items	\$30,000.00
Subtotal		\$145,000.00

Location:
South of 50th Avenue to North of 53rd Avenue

A	Demolition & Removals	\$25,000.00
B	Utility Relocation	TBD
C	Storm Drainage	\$20,000.00
D	Road Works	\$125,500.00
E	Sidewalks	\$69,000.00
F	Crosswalks	\$6,000.00
G	Lighting	\$56,000.00
H	Site Furnishings	\$5,000.00
I	Landscaping	\$52,000.00
J	Miscellaneous Items	\$8,000.00
Subtotal		\$366,500.00

Location:

North of 53rd Avenue to North of 58th Avenue

A	Demolition & Removals	\$15,000.00
B	Utility Relocation	TBD
C	Storm Drainage	\$0.00
D	Road Works	\$31,500.00
E	Sidewalks	\$83,000.00
F	Crosswalks	\$8,000.00
G	Lighting	\$105,000.00
H	Site Furnishings	\$16,500.00
I	Landscaping	\$18,500.00
J	Miscellaneous Items	\$5,000.00
Subtotal		\$282,500.00

Location: 58th Avenue Intersection

A	Demolition & Removals	\$33,000.00
B	Utility Relocation	TBD
C	Storm Drainage	\$30,000.00
D	Road Works	\$59,500.00
E	Sidewalks	\$28,000.00
F	Crosswalks	\$21,500.00
G	Lighting	\$14,000.00
H	Site Furnishings	\$0.00
I	Landscaping	\$62,000.00
J	Miscellaneous Items	\$5,000.00
Subtotal		\$253,000.00

IMPLEMENTATION AND PHASING

For implementation purposes, the elements of this Plan relate geographically rather than by type of work. Focusing on an individual area or combination of areas and fully completing those segments is cost effective and will minimize long term disruption to traffic and adjacent land uses.

Priority for phasing may be considered by determining which areas will have the greater impact in realizing the overall objectives of the Plan.

Suggested possible project Phases are as follows:

PHASE	COST
Phase 1A	
26th Avenue to North of 30th Avenue	\$671,680.50
30th Avenue Intersection	\$141,230.00
Phase 1B	
South of 30th Avenue to North of 34th Avenue	\$362,365.00
32nd Avenue Intersection	\$97,844.50
Phase 2A	
34th Avenue to North of 38th Avenue	\$213,092.00
38th Avenue Intersection	\$115,937.00
South of 38th Avenue to Elbow River	\$144,491.50
Phase 2B	
Lansdowne Intersection	\$388,625.00
Phase 2C	
South of Lansdowne Intersection to North of Imperial Way	\$574,141.00
Phase 3	
North of Imperial Way to North of 50th Avenue	\$269,003.50
47th Avenue Intersection	\$54,220.00
49th Avenue Intersection	\$76,037.00
Phase 4	
50th Avenue Intersection	\$144,465.00
South of 50th Avenue to North of 53rd Avenue	\$365,413.00
Phase 5	
North of 53rd Avenue to North of 58th Avenue	\$283,321.00
58th Avenue Intersection	\$252,444.00

CONCLUSIONS

The Calgary Transportation Plan (Go Plan) long term vision seeks to achieve a balance of Mobility, Community & Environmental Quality and Cost / Affordability. For Inner City communities the balance is primarily focused on Mobility and Community & Environmental Quality.

The Urban Streetscape Design & Traffic Management Plan for Elbow Drive recognizes this balance:

- Reasonable mobility is maintained for road users - present traffic volumes can be accommodated without significant delays in travel time through the corridor.
- The Plan proposals to improve pedestrian crossings, enhance the streetscape, and change the visual character of the road with medians speak positively the Community & Environmental Quality side of the triangle.

The Urban Design & Traffic Management Plan is consistent with the stated ICTSMS objectives for Elbow Drive S.W. in that:

- Concepts are proposed in the Plan which, if implemented, will alter the character of the road, and communicate to drivers that they are in a residential area, and not on a high speed road.
- The corridor will still be capable of carrying a large volume of traffic.

Some of the recommendations of the Technical Review Panel Report have not been incorporated in this Plan:

- The Lansdowne Avenue traffic circle has not been replaced with a conventional signalized intersection.
- Off-peak, on-street parking has not been provided.

APPENDICES

PROJECT TERMS OF REFERENCE

In the context of the Calgary Transportation Plan (GoPlan), and the Inner City Transportation System Management Strategy (ICTSMS):

- Prepare alternative design options, and a recommended final plan, for an 'enhanced streetscape and traffic calming plan' for the Elbow Drive corridor.
- Provide advisory services related to the technical analysis of traffic calming options and strategies.
- Provide qualitative transportation related assessments of the combined streetscape enhancements and traffic control measures, on the role and function of Elbow Drive.
- Participate in the public consultation process.
- Prepare of the necessary project conceptual design plans, documents and reports.
- Participate in the approvals process, i.e: Council Standing Committees and City Council.

BICYCLE ROUTE DISCUSSION

The Calgary Cycle Plan indicates Elbow Drive be designated as a cycle route (on-street) for its full length, to provide commuter cyclists with a direct route to and from downtown. Presently, bicycle traffic through the area is indirect and off-street north of the Elbow River. South of the river, 5th Street S.W. is the on-street bike route. Commuter cyclists prefer (generally) an on-street system over a circuitous multiple use pathway system, and while Elbow Drive may seem an obvious choice, there are limitations to officially designating the road as a cycle route.

In order to meet current minimum City of Calgary cycle route standards Elbow Drive would require widening to a width of 15.6 metres (2 curb lanes @ 4.3 m. shared for bicycles and cars, and 2 driving lanes @ 3.5 m.). Elbow Drive, through most of the project area has a width of 14.0 metres. As such, a widening of the road by 1.6 metres would be required. Although such a widening may be physically possible, it would:

- Require elimination of the proposed central treed medians in Elbow Park.
- Reduce boulevard widths through Britannia and Elboya, and/or eliminate the proposed central treed medians between Britannia Drive and Crescent Boulevard.
- Require elimination of the proposed central treed medians in Windsor Park.
- Require reduction of monolithic sidewalk widths through most of Windsor Park to the City minimum of 1.4 metres, (rather than the proposed standard of 2.0 metres for monolithic sidewalks on Elbow Drive.

More importantly, widening Elbow Drive is counter to the project objective of creating a 'more residential street', by physically or perceptually narrowing the road. This plan proposes:

- Elbow Drive not be designated a cycle route
- The existing pathway from 4th Street / 26th Avenue be reconstructed to a width of 3.0 or 3.5 metres, on a fluid alignment to the south end of Woods Park; and as a shared 'sidewalk' (3.0 m.) to 36th Avenue S.W. The route would then proceed on-street via 36th Avenue and 5th Street.

This proposal has been reviewed and endorsed in principle by the Transportation Planner responsible for the Calgary Cycle Plan.

INNER CITY ROAD DESCRIPTIONS - TABLE 1

Activity	SUPPORTING COLLECTOR ROAD		SECONDARY ROUTE Elbow Drive		MAJOR STREET
	Residential	Commercial	Residential	Commercial	
Traffic Service Function	equal to land service	equal to land service	somewhat more than land service	somewhat more than land service	primary
Land Service Function	equal to land service	equal to land service	somewhat less than land service	somewhat less than land service	secondary
Typical Traffic Volumes	5,000-15,000	5,000-20,000	10,000-30,000	10,000-30,000	20,000-30,000
Traffic speeds posted km/hr	40 to 50	50	40 to 50	50 to 60	50 to 70
Vehicle Types	mixed	mixed	mixed	mixed	all types
Percentage of Through Traffic	<50%	<50%	<75%	<75%	80% +
Transit Services	some	some	yes	yes	yes
Commuter Cyclist Activity	encouraged on-street facilities	encouraged on-street facilities	encouraged on-street or separate facilities	encouraged on-street or separate facilities	discouraged separate facilities preferred
Pedestrian Crossing Activity Control	medium crossings with traffic calming	high crossings with traffic calming	medium some restrictions and protection	medium some restrictions and protection	low restricted crossings
Parking Controls	may be peak period restrictions	may be peak period / turnover restrictions	peak period restrictions	peak period / turnover restrictions	prohibited
Degree of Parking Activity (when not restricted)	low to moderate	moderate to high	low to moderate	high	n/a
Access Conditions	few, restrictions	some controls	no direct access preferred	more vigorous controls	rigidly controlled
Typical Pavement Widths, metres	11 to 14	11 to 14	12 to 18	12 to 18	4 lane: 14.8+ 6 lane: 22.2+
Typical Building Setbacks	varies	zero to medium	varies	zero to medium	large
Traffic Control	pedestrian flashers, some stop, occasional signals	pedestrian flashers, some stop, occasional signals	restricted pedestrian crossings, traffic signals	traffic signals	traffic signals, grade separations
Traffic Calming Measures	selective to reduce speeds, manage volumes, protect pedestrians	selective to reduce speeds, manage volumes, protect pedestrians	isolated opportunities only, primarily pedestrian oriented	isolated opportunities only, primarily pedestrian oriented	none except potential pedestrian crossing enhancement

• chart extracted from 'Inner City Transportation System Management Strategy', p. 17 & 18

PUBLIC CONSULTATION PROCESS

PUBLIC INVOLVEMENT

At the onset of this project, and prior to the commencement of any design, a group of citizens (the 'Small Group') was assembled to assist in the process of formulating this plan for Elbow Drive. This citizen group included, initially, persons representing the communities within this stretch of Elbow Drive, immediately abutting communities and other stakeholders such as the Federation of Calgary Communities and Calgary Transit. By the final 'Small Group' session, participation had expanded to include other communities such as Haysboro, Kingsland and Southwood, etc. Representatives from these communities requested inclusion to advocate (primarily) for the continued efficacy of Elbow Drive to serve the commuting function for their residents. Three sessions were held with the 'Small Group', after which two larger 'Public Review Sessions', were conducted.

'SMALL GROUP' SESSIONS

Session #1 • September 27, 2001

- included a review of the project origins, a presentation of 'generic' traffic calming techniques, statements by the attendees defining their community perspective on the project, and a question and answer session.

Session #2 • October 24, 2001

- included a background review, question, comment and answer session and a 'sketch' design workshop with groups focusing on specific project areas.

Session #3 • November 7, 2001

- included a background review, a presentation of preliminary design plans for the project with design options for various locations, and a question, comment and answer session.

'SMALL GROUP PARTICIPANTS'

John Frain.....	Meadowlark Park Comm. Assoc.
Marc D'Hont.....	Meadowlark Park Comm. Assoc.
James McDonald.....	Meadowlark Park Comm. Assoc.
Bradley Nemetz.....	Britannia Comm. Assoc.
Mart Kemahan.....	Britannia Comm. Assoc.
Roy Lee.....	Britannia Comm. Assoc.
Ruth Hewitt.....	Britannia Comm. Assoc.
Elaine Kenahan.....	Britannia Comm. Assoc.
Donna Stemp.....	Britannia Comm. Assoc.
Michael Hare.....	Britannia Merchants Assoc.
Wayne Back.....	Britannia Merchants Assoc.
Michael Hare.....	Britannia Merchants Assoc.
Tom Hanrahan.....	Parkhill Stanby Pk. Comm. Assoc./ICC
Bob Lang.....	Cliff Bungabw-Mission Comm. Assoc.
Belinda McDowell.....	Elbow Park Res. Assoc.
Tracy Beaumont.....	Elbow Park Res. Assoc.
Don Campbell.....	Elbow Park
Renate Palmer.....	Elbow Park
Brian Hearst.....	Elbow Drive Resident
Herve Boscher.....	Mayfair/Belaire Comm. Assoc.
Eric Libin.....	Mayfair/Belaire Comm. Assoc.
Cathy Work.....	Elboya Comm. Assoc.
Olga Knight.....	Elboya Comm. Assoc.
Bruce Trevitt.....	Elboya Comm. Assoc.
Robin Abramski.....	Elboya Comm. Assoc.?
Nick Wieler.....	Windsor Park Comm. Assoc.
Murray Desrosiers.....	Windsor Park Comm. Assoc.
Jeff Holloway.....	Mount Royal Comm. Assoc.
Larry Ryder.....	Rideau/Roxboro Comm. Assoc.
Judy Mahaffy.....	Rideau/Roxboro Comm. Assoc.
Miles Palmer.....	Rideau/Roxboro Comm. Assoc.
Wade Lobeg.....	Braeside Comm. Assoc.
Dean Shattenkk.....	Kingsland Comm. Assoc.
Sally Haggis.....	Haysboro Comm. Assoc.
Kathy Spark.....	Haysboro Comm. Assoc.
Anne Stolbert.....	South Calgary Comm. Assoc.
Bob Jonathan.....	Southwood Comm. Assoc.
Vivien Jonathan.....	Southwood Comm. Assoc.
Ald. Madeleine King.....	Ward 8
Ald. Barry Erskine.....	Ward 11
Margaret Lounds.....	Inner City Coalition
Heather Galbraith.....	Federation of Calgary Communities
Cynthia Busche-Hiebert.....	Comm. & Neighbourhood Services
Juliet Andeton.....	Calgary Transit
Keith West.....	Calgary Transit
Rick Sample.....	Calgary Roads
Martin Halliday.....	Calgary Roads
Loyde Morasch.....	Morasch Trans. Consultants Ltd.
Susanna Komendi.....	Morasch Trans. Consultants Ltd.
Radya Rifaat.....	Morasch Trans. Consultants Ltd.
Linda Stewart.....	Public Consultation Services
Cristal McLean.....	Carson • McCulloch Assoc. Ltd.
Tim McCulloch.....	Carson • McCulloch Assoc. Ltd.

SUMMARY OF PUBLIC REVIEW SESSIONS

On Tuesday, November 27 (Elboya), and Wednesday, November 28 (Elbow Park), 2001 two public review sessions were held to gather public input on the draft Urban Streetscape Design & Traffic Management Plan for Elbow Drive. Flyers advertising the review sessions were delivered to 4,800 households in the Elbow Drive area north of Glenmore Trail. A city-wide newspaper ad was placed in the Calgary Herald on November 23, and news articles were distributed to community newsletters. Notice of the open houses was sent by first class mail to out-lying community associations, and to the approximately 100 individuals who had expressed an interest in the project, participated in the small group meetings on this topic, and/or sat on the previous Inner City Transportation Study Round Table.

A total of approximately 400 people attended the two sessions. Detailed written comments, containing a wide variety of views, were submitted by 149 individuals at, or after the meetings. Of these, 49 people voiced support for the proposed streetscape design and traffic management plan, citing the importance of safety for pedestrians and cyclists, and the need for The City to show leadership in achieving traffic calming and improved quality of life for inner city communities. Forty three (43) others expressed fundamental opposition to the design plan and principles of traffic calming, stating it was a waste of money, would disadvantage commuters from outlying communities, and that Elbow Drive is already beautiful and does not need enhancement. Ten (10) respondents preferred to see traffic flow improved through various methods, and 7 others suggested we need to get used to big city traffic as a way of life. Other comments expressed by a significant number of people include:

- 25 said: The plan should do more to facilitate safe bicycle movement on or off the street
- 26 said: The bus system needs to be improved to provide a feasible alternative
- 27 said: Agree with the installation of treed medians
- 28 said: Opposed to treed medians

- 29 said: Remove trees from the proposed medians
- 30 said: Support improved crosswalks and pedestrian movements (13 others suggested specific pedestrian improvements)
- 31 said: Agree with repairing and completing missing sidewalks
- 32 said: Agree with widening the sidewalks
- 33 said: On-street parking should be allowed on Elbow Drive as a way to slow traffic (2 opposed)
- 34 said: Support the proposed "T" intersection for Sifton at Elbow (6 disagreed with the redesign)

The results of the design options proposed for two intersections were as follows:

- **30 Ave. at Elbow Drive** – 72 preferred the intersection to remain as is, while 35 preferred the removal of the southbound right turn lane.
- **Lansdowne/Riverdale Intersection** – 63 preferred the "traffic circle" intersection to remain as is, while 52 favoured a change (with 39 of those preferring a more traditional intersection configuration, to reduce current confusion).

A large number of comments were outside the scope of this particular plan. Of these, 15 people stated their opposition to the implementation of a 40 km/hr speed limit on Elbow Dr., while the same number (15), expressed support for such a move. Eight (8) wanted to shorten or eliminate the 30 km/hr playground zone, and 4 said a continuous 40 km/hr zone would be better than intermittent 30 and 50 km/hr speed limits. Ten (10) people voiced the need for more and better police traffic enforcement. A total of 33 comments advocated that The City implement major street improvements (such as the 37 St. extension, the Glenmore/Elbow interchange, the 50 Ave. extension, etc.) before or in conjunction with the introduction of traffic calming measures on Elbow Drive to provide motorists with feasible alternatives.

TRANSIT DISCUSSION

GENERAL

- The major #3 commuter bus route serves Elbow Drive. Maintaining mobility for transit buses to serve their clientele in a timely and convenient manner is a priority for Calgary Transit.
- Calgary Transit does however, support improvements and enhancements to the streetscape that will improve safety and convenience for their customers, but not unduly restrict mobility.
- Calgary Transit representatives have been actively involved in the process to formulate this plan for Elbow Drive.
- All existing bus stops and zones have been retained, with some minor modifications.

SPECIFICS

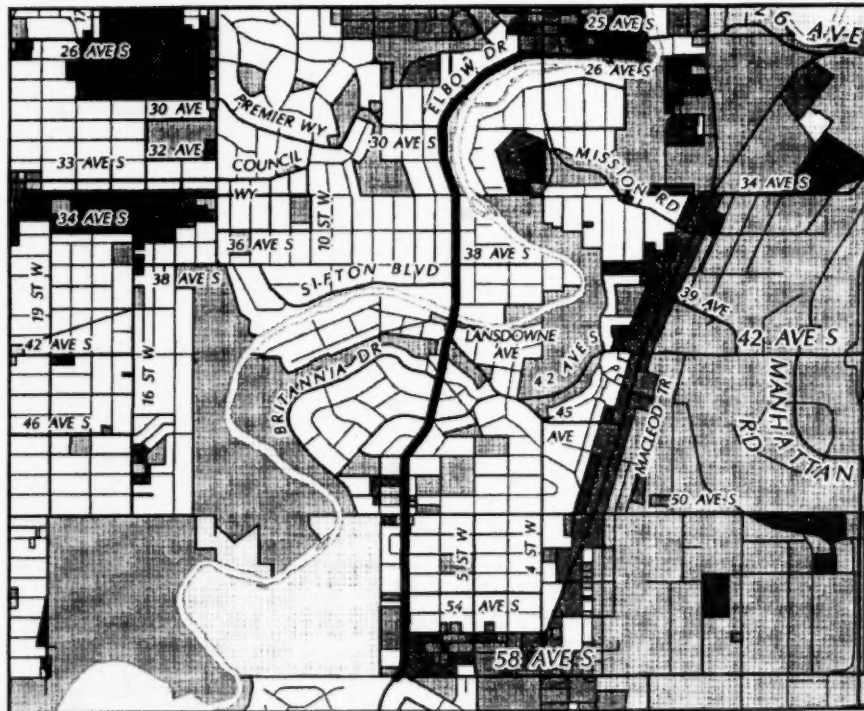
- The north bound bus bay near at Woods Park has been eliminated; the bus stop is retained.
- The southbound bus zone south of 30th Avenue has been redesigned in concert with the formalization of the parking lane at this location.
- There is no change to Transit operations at the Lansdowne traffic circle.
- The northbound bus zone north of 47th Avenue is relocated farther north to improve sight lines.
- It is suggested that the east end of the median at the Britannia Shopping Centre be shortened, to eliminate bus collisions with this median.
- The northbound bus bay north of 50th Avenue has been redesigned in conjunction with elimination of the free flowing right turn from 50th avenue to Elbow Drive.

CORRIDOR STRATEGY FOR ELBOW DRIVE FROM ICTSMS REPORT

Inner City Transportation Study

ELBOW DR SW

BETWEEN 4 ST SW and 58 AVE SW



CORRIDOR STRATEGY FOR ELBOW DRIVE FROM ICTSMS REPORT (CONT'D)

Elbow Drive From 26 Avenue to 58 Avenue SW

Land Use And Planning Context

Elbow Drive serves the communities between 26 Avenue and Canyon Meadows Drive dating from the early 1900's to the present day. All of these communities are predominantly single family as is virtually the entire frontage along Elbow Drive. Between 4th Street and 34th Avenue, the Elbow River and Parkway form the easterly edge condition. Some retail and service commercial activities are located at the junctions of 50th, 58th Avenue and Glenmore trail. Elbow Drive subdivision developed in the early part of the century typically provided extensive front yards in large, single family lots. More conventional yard setbacks are to be found as later development extends southward.

The proposals of this plan ONLY DEAL with the portion between 26th Avenue and 58th Avenue SW.

Mobility

Elbow Drive is another road that has and will continue to experience increased pressure and traffic volumes (1998, 27,000 – 30,000 vehicles / day). This is primarily due to the catchment it readily serves to Downtown from the far south an because of the "missing link" (ie: 14th Street south of 38th Avenue to the west).

Other important contributing factors include Macleod Trail capacity constraints and the extraordinary rate of growth the city has and will likely continue to experience. In the 1980's, City Council approved the reclassification of Elbow Drive from Major Road to Collector road. During the intervening years, the only measure that has been introduced to reflect that intent was the introduction of the extended playground zone and thus, traffic on this route has continued to grow.

The construction of the grade separated interchange at Glenmore and Elbow Drive will further enhance the attractiveness of this road both from a north-south perspective and because it will improve the eastbound to northbound movement off of Glenmore Trail.

CORRIDOR STRATEGY FOR ELBOW DRIVE FROM ICTSMS REPORT (CONT'D)

Balancing The Triangle

Elbow Drive in the south, like Memorial Drive in the north, is one of the more picturesque drives in the city and it serves both a local collector and regional function for a large catchment area. Fewer traffic controls make Elbow Drive a very attractive alternative to Macleod trail S. Construction of the interchange at 25th Avenue and Macleod Trail and the 26th Avenue connector between Blackfoot Trail and Macleod Trail would lessen the pressure on Elbow Drive by improving the performance and attractiveness of these alternate routes.

Addressing the issues and concerns of the neighborhood is passes through directly at the local level is also a challenging task. Today, Elbow Drive is a relatively high-speed environment. The extended playground zone and enforcement have provided some relief, however, strong community concerns remain. The challenge here is to introduce measures, which will improve the environment for adjacent residents, pedestrians and cyclists while allowing the road to carry a large volume of vehicles. The Panel is of the view and Administration agrees, that this could be achieved with a 40 km / hr speed limit. The introduction of a 40 km / hr zone is proposed for the corridor as a means to create a much safer driver, pedestrian and cyclist environment without reducing the capacity of the road to handle the demands placed on it. To achieve a greater degree of compliance, the streetscape environment must be changed to reinforce that objective along with consistent enforcement.

Summary

To address the issues and concerns of the adjacent communities as well as the mobility concerns of the city, it is proposed that between 26th Avenue South and 58th Avenue south, a 40 km / hr zone be established. At the same time, an urban design exercise be undertaken that will strive to recreate an environment conducive to compliance with the 40 km / hr speed zone and safer driving conditions.

Recommendation

1. That Elbow Drive be described as a "Secondary Route".
2. Subject to broad community consultation, a 40 km / hr zone be established between 26th Avenue and 58th Avenues SW.
3. That an urban design streetscape plan be developed in stages for this corridor and preparation of the plan should occur for the next 12 months. The intent observations and ideas generated by the Technical Review Plan Report #12, page 4, 5 and 6 should help inform and guide the plan development process.

4. That the City and community embrace an ongoing commitment to establish and maintain a balance between community quality of life and safe and acceptable mobility for road users.

TECHNICAL REVIEW PANEL REPORT FOR ELBOW DRIVE

Sections 2 and 3 of

Technical Review Panel

Report #12

Inner City Transportation Study

Elbow Drive

From 26th to 58th Avenue SW

February 2000

TECHNICAL REVIEW PANEL REPORT FOR ELBOW DRIVE (CONT'D)

2. Analysis

The Panel is in general agreement with many of the comments in the "Corridor Assessment Process" report relating to the corridor assessment, its role / function today, its future role and the description of issues

We are also in general agreement with a number of the suggestions regarding the operational characteristics of Elbow Drive presented in the "Written Submission from Elbow Park Resident's Association", (Attachment 11 – TTP99-23), dated April 20, 1999.

However, the Panel would like to add the following observations regarding Elbow Drive:

1. Elbow Drive is currently classified as a collector road, but is also identified in the ICTS report as a "key main route". As its traffic volume range from 23,000 (north of 30 Avenue – 1998 data) to 36,000 (north of 50 Avenue – 1998 data), it is well past the stage of functioning as a residential collector, with the volume guideline for collector roads being 5,000 vehicles per day.
2. The existing street environment of Elbow Drive, for most of its length, encourages moderate to high speeds. Even in the stretch where there is a 30 km / hr speed limit, there is little evidence in the physical characteristics of the street (other than the 30 km / hr traffic signs) that this is a slow-speed roadway.

Starting at Glenmore trail (and going northward), the street environment of Elbow Drive as viewed by the driver is clearly on of high speed. The commercial enterprises in the first block to the north and the wide right-of-way create an impression of a high-speed roadway with wide travel lanes, few stop lights and little interference from side street traffic of pedestrian activity.

This environment changes somewhat as you travel further north along Elbow Drive, but the mindset that this is a high speed environment has already been established from drivers traveling on the road.

The driving public understands that Elbow Drive is not only a more pleasant and less stressful commuting route than Macleod Trail, but that it can be faster because it has fewer signalized intersections.

TECHNICAL REVIEW PANEL REPORT FOR ELBOW DRIVE (CONT'D)

3. Unless preventative action is taken, the pressures on Elbow Drive accommodate more traffic in the future will increase when the new Glenmore Trail / Elbow Drive interchange is built. The interchange will have a significant impact on traffic accessing Elbow Drive from Glenmore Trail. The interchange off ramps and the transition onto Elbow Drive will have to be carefully designed, with traffic calming physical features to create the proper street environment for Elbow Drive as it stretches northward. Considerations should also be given to controlling the amount of "green light time" for northbound Elbow Drive traffic. The Glenmore / Elbow interchange should be designed to facilitate movement on the skeletal road network, not increase volumes on Elbow Drive north of Glenmore Trail.

3. Recommendations

1. The Panel supports the re-designation of Elbow Drive from a Collector to "Secondary Route-Residential" recognizing its necessary function in the area network. The new term, "Secondary Route – Residential" is discussed in ICTS Panel Report #2. Elbow Drive would continue to service Secondary Route – Residential functions, but traffic volumes should be moderated as the skeletal system and alternative north-south "Major Arterials" (e.g. Macleod Trail, Blackfoot Trail 26th Avenue SW) are upgraded.
2. While Elbow Drive is considered to be a Secondary Route – Residential, the new refined definition of this term makes it clear that the intent is not to make physical improvements to increase automobile capacity. Rather, the intent is to attempt to control volumes as much as possible through making improvements which reduce traffic speed, increase pedestrian safety and establish a high quality environment which respects the integrity of the surrounding residential neighborhoods.
3. The Panel recommends that Elbow Drive, between 5th Street and 50th Avenue, be rezoned to a 40 km / hr speed limit.

ICTS Panel Report #5 discusses 40 km / hr speed zones. The report points out that there are certain benefits to maintaining a consistent 40 km / hr speed zone throughout the length of a route that is being concerted from 50 km / hr to 40 km / hr. It also suggests technical merits when establishment of a 40 km / hr zone is being considered. It is on Elbow Drive. As part of this detailed review, traffic calming physical improvements and signage in the area should be considered to ensure that a safe pedestrian environment is maintained.

TECHNICAL REVIEW PANEL REPORT FOR ELBOW DRIVE (CONT'D)

4. The Panel recommends that a physical improvement and traffic calming program be established to improve the physical environment of Elbow Drive. This program should be initiated with funds recently allocated for Inner City transportation projects. These improvements would change the character of the roadway, emphasize its residential character and make it clear through a variety of visual cues that this roadway is not designed to facilitate high speed commuter traffic.

This traffic calming approach recognizes that where traffic volumes are high and are not likely to be reduced significantly, a strategy to modify driver behavior and slow the pace of the traffic is the most effective and sometimes the only realistic way to create a safe environment. While this approach may not reduce traffic volumes, it may help reduce the rate of increase in traffic.

These physical improvements and traffic calming measure should be implemented in conjunction with community consultation and an analysis of the possible impacts of traffic potentially diverted away from Elbow Drive into neighboring communities. The affected community associations along this route should actively participate in the design and implementation of the improvements.

The following are examples of the physical improvements and traffic calming measures that could be considered:

- Narrowing of Elbow Drive and the establishment of a special character of theme for the road through a combination of the following measures:
 - the construction of a treed / landscaped median (with additional aesthetic enhancements such as historic street lighting, flower beds, bollards, historic signs and plaques) along much of its length, starting immediately south of the Glenmore Trail intersection,
 - a widening of the boulevards on one of both sides of the street (i.e.: narrowing the width of the pavement) in appropriate locations, and / or
 - allowing on street parking and introducing large landscaped curb bulbs in locations where four traffic lanes can be maintained.
- The installation of significant traffic calming elements, including a major Gateway feature in the area immediately north of Glenmore Trail – to strongly convey to the driver that Elbow Drive from this point onward is a slower

speed environment consistent with the predominant residential character. The Gateway should be constructed in conjunction with the new traffic interchange.

TECHNICAL REVIEW PANEL REPORT FOR ELBOW DRIVE (CONT'D)

- The installation of additional traffic calming elements, including at Gateway feature at 50 Avenue, to "announce" to drivers that Elbow Drive from this point onward is a 40 km / hr zone and that there are a number of pedestrian crossing areas or potential conflict locations.
 - Replacement of the existing "traffic circle" intersection at Elbow Drive and Lansdowne Avenue with a reconfigured, conventional signalized intersection, without any free flowing right-turning roadway.
 - The installation of physical features to enhance all pedestrian crosswalk areas on Elbow Drive, ie: textured pavement, additional pedestrian level lighting, historic street lighting and signs, landscaped curb bulbs, landscaped / treed medians, raised medians to replace painted medians, benches, etc.
 - Modification of the Elbow Drive / 5th Street intersection in conjunction with the recommended conversion of 5 Street from one way to two way, eliminate the southbound free flowing right-turning roadway as part of this intersection reconfiguration.
 - The installation of more pedestrian activated crossing lights over time, where appropriate and in a manner consistent with the City's overall strategies and implementation policies.
 - The utilization of off-peak, on street parking as a traffic calming measure in selected sections, one important criteria being locations where the driveways onto Elbow Drive are widely spaced or non-existent.
 - Management of the timing of traffic signals at intersections along Elbow Drive to moderate the speed and flow of traffic.
5. The Panel recommends that in conjunction with the changes to be made to the operation of Elbow Drive to increase safety and reduce traffic volumes, and assessment be carried out on the possible spill-over effect of these changes on other roads within the adjacent neighborhoods. Following this area-wide assessment, further traffic claming or traffic diverting measures may have to be installed on some of these other roads.
6. In the context of area-wide impacts, the implementation of significant upgrades to the Major Arterial Roads should be considered as a critical component in the

strategy to ease traffic impacts on existing over-taxed north-south routes such as Elbow Drive. Additionally, significant improvements to commuter bicycle routes as well as the bus and LRT systems in the south and southwest must be seen as critical components to the long-term management of traffic in this part of the Inner City.

